ONE20
Installation Manual

Version B
July 2008

http://www.oneaccess-net.com

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How to Read this Manual

The present document is broken down into 7 chapters.

Chapter 1 – Safety Instructions

This chapter provides the safety instructions for use and installation of the router.

Chapter 2 – Directives and Standards

This chapter details the list of standards, which the router complies with.

Chapter 3 – Router Description

This section describes the router front and rear panels and the associated technical characteristics.

Chapter 4 – Interface Description

This section describes the router interfaces.

Chapter 5 – Technical Characteristics

This section describes technical characteristics such as operating conditions.

Chapter 6 - Installation

This chapter describes how to mount a daughter-board and gives instructions to connect the router.

Chapter 7 – Power-up

This chapter describes the device power-up and how to monitor the self-test progress.

Appendix – Connection description

These chapters provide the pin-out of cables that are compatible with the router.

Table of Contents

1 Safety Instruction

The following symbol instructs the user to consult the manual before any connection.

1.1 Connection to Power Supply

To connect the power supply, always follow these steps:

Connect the DC input jack from the power supply to the DC 12V power input on the rear panel of the router,
Connect the power supply to an AC electrical outlet (100-240 VAC). Plugging in the power supply turns on the router.

Unplug the AC input before mounting/un-mounting any part on the device. The AC input is the part you must disconnect first. For safety reasons, you shall be able to easily access this part.

1.1.1 Overcurrent Protection

The product requires that the building's electrical installation is designed for protection against short-circuit (over current) protection.

A fuse or circuit breaker no larger than 240 VAC, 10A must be used on the phase conductors.

1.2 Safety Level Interface

The daughter boards must be installed only in the products authorized by OneAccess and only by qualified personnel as recommended in the installation manual.

1.2.1 LAN Interface 10/100 Mbps (SWITCH)

Interface marking on the rear panel: SWITCH

The Ethernet 10/100 Mbps auto-sense has a 'SELV' (Safety Extra Low Voltage) interface.

They must be used only for indoor applications, connected to a 10/100 Mbps interface, which has also the 'SELV' characteristics.

1.2.2 ADSL, ADSL 2/2+, RE-ADSL (ADSL)

Interface marking on the rear panel: ADSL

The router has an ADSL interface TNV-1 type (Telephone Network Voltage), designed for connection to a telephone line.

1.2.3 ISDN Backup interface (ISDN)

Interface marking on the rear panel: ISDN

The ISDN interface is TNV-1.

It must be only connected to an ISDN S0 interface.

1.2.4 RS 232 Interface (CONSOLE)

Interface marking on the rear panel: CONSOLE

The Console interface is TBTS.

They must be used only for indoor applications and connected to RS 232 interfaces, which are also designed as 'SELV'.

2 Directives and Standards

2.1 Declaration of Conformity

Déclaration de conformité suivant les directives R&TTE, DBT et CEM
Declaration of Conformity according to R&TTE, LVD and EMC directives

ONE20

Routeur et adaptateur de réseau / *Router and network adapter*

Tension d'alimentation / *Supply voltage* : 200-240 Vac, 20 W, 50-60 Hz (12V – 1,7A)

Avec les cartes / *with the cards :*

Nous déclarons que ce produit est présumé conforme aux exigences essentielles applicables des directives suivantes du Parlement Européen et du Conseil :

- la Directive R&TTE 1999/5/CE, du 9 mars 1999, concernant les équipements hertziens et les équipements terminaux de télécommunications et la reconnaissance mutuelle de leur conformité ;
- la Directive Basse Tension 73/23/CEE du 19 février 1973 concernant le rapprochement des législations des Etats Membres relatives au matériel électrique destiné à être employé dans certaines limites de tension ;
- la Directive CEM 89/336/CEE du 3 mai 1989 concernant le rapprochement des législations des États membres relatives à la compatibilité électromagnétique, modifiée par la Directive 92/31/CEE du 28 avril 1992.

We declare that this product has been given a presumption of conformity with the applicable essential requirements of the following directives of the European Parliament and of the Council :

- *R&TTE Directive 1999/5/EC of march 9th 1999, on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity ;*
- *Low Voltage Directive 73/23/EEC of february 19th 1973, on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits ;*
- *EMC Directive 89/336/EEC of may 3rd 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility, amended by Directive 92/31/EEC of april 28th 1992.*

Nous déclarons que les normes harmonisées suivantes ont été utilisées pour démontrer cette présomption de conformité et ont donné lieu aux rapports de tests suivants, disponibles sur demande.

We declare that the following harmonised standards were used to demonstrate this presumption of conformity and the results are included in the following tests reports, which can be made available on request.

EN60950 : 2000 (3rd edition)	Rapport / *Report* : 03ME03475-03302003
EN 300386 V1.3.1 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 55022 (98)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-3-2 (2000)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-3-3 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-2 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-3 (2002)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-4 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-5 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-6 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK
EN 61000-4-11 (2001)	Rapport / *Report* : 177005 AI/EN/DK - 177006 EN/DK

Laboratoire UL France pour la Sécurité – UL France Laboratory for Security
Laboratoire Gyl Technologie pour CEM – Gyl Technologie Laboratory for CEM

Le produit est marqué du symbole « CE » en application des directives citées ci-dessus.
The product is marked with the « CE » symbol in accordance with the directives mentionned above.

Responsable autorisé / *Authorized signatory* : Directeur Général / *Chief Operating Officer*

Nom / *Name* : Denis BEHAGHEL

2.2 Standards

The ONE20 is designed in conformity with the standards listed hereafter, provided that the basic housing, modules, interface boards and installation kits are mounted as recommended in the corresponding installation manual(s).

Safety	
EN60950 (2000)	Safety of information technology equipment, including electrical business equipment.

Environment:	
Climatic, physic-chemical, mechanic, packing	
ETS 300 019-1 (95)	Environmental conditions and environmental testing for telecommunication equipment
In use: Temperature Controlled	
Test specification: - Class T3.1 (normal) - Class T3.1 (exceptional)	Part 1, Classification of environmental conditions
Storage: partly temperature controlled	
T1.1	Part 2, Specification of environmental test
Transportation: careful Transportation	
T2.3	

Electromagnetic Compatibility, immunity	
EN 55024	Information technology equipment immunity characteristics. Limits and methods of measurement.
EN 55022 class B (98)	Limits and methods of measurement of radio interference characteristics of information technology equipment.
FCC part 15 class B	Federal Communication Commission regulation (USA).
EN 300386 V.1.3.1 (2001)	EMC Requirements

ES 201 468	Evaluation in progress
EN 301 511 (GPRS/EDGE only)	Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC)
EN 301 489-01 (GPRS/EDGE only)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301 489-07 (GPRS/EDGE only)	ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)

2.3 FCC Statement (USA)

The United States Federal Communications Commission (in 47 CFR 15.105) has specified that the following notice be brought to the attention of users of this product:

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference's by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the device and the receiver.
Connect the device into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio/TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00345-4.

Use of a shielded cable is required to comply within Class B limits of Part 15 of FCC Rules.

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this device not expressly approved by OneAccess may cause, harmful interference and void the FCC authorization to operate this device.

3 Router Description

The following interfaces are available on the ONE20 (the interface marking of the rear panel is indicated in bold and between bracket hereafter):

- 1 ADSL, ADSL 2/2+, RE-ADSL access **(ADSL),**
- 1 console port (**CONSOLE**),
- 1 managed switch with 4 ports (**SWITCH**),
- 1 optional access for backup ISDN **(ISDN),**
- 1 optional EDGE/GPRS access **(EDGE),**
- 2 optional interface WLAN 802.11b/g.

3.1 Front Panel

The front panel is provided with LEDs, which inform about the status of several router functions.

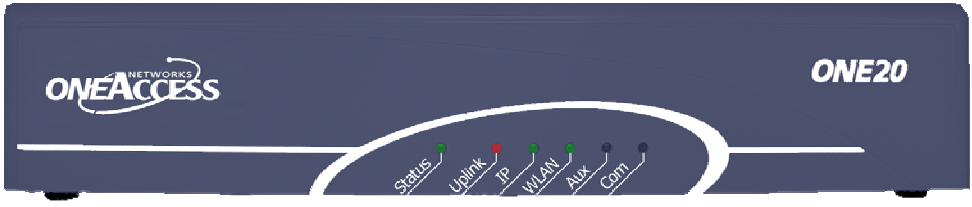


Figure 1. Front panel

LEDs	OFF	Green	Red	Orange	Blinking green
Status	Switched Off	Switched On & Operational	Switched On & Not operational		Reboot in progress
Uplink	ADSL not configured	Synchronized	Not synchronized		Synchronization in progress
IP	Not used	All IP interfaces are up	All IP interfaces are down	At least one IP Interface is not up (example: PPPoA not connected)	
WLAN	Not used	Interface up			Traffic in progress
Aux Not used					
Com Not used					

3.2 Rear Panel

This section details the ONE20 rear panel so that the user can connect the cables on the proper interface.

3.2.1 Configuration

All the connectors are located on the rear panel:

- 1 ADSL 2/2 + access (RJ11) (**ADSL**),
- 1 console port (RJ45) (**CONSOLE**),
- 4 communication ports (RJ45) marked (**SWITCH – E0 - E3**),
- 1 backup ISDN access (**ISDN**),
- 2 connectors for WLAN antenna,
- Input for the external power supply connector (DC input jack, **12V-1.7A**).

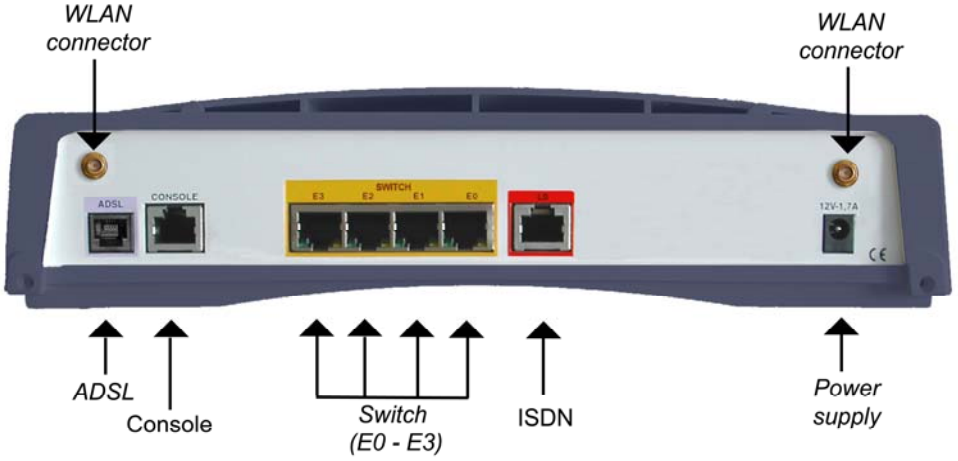


Figure 2. Rear panel

3.3 Motherboard

The motherboard provides:

- Router resources (CPU, DSP, memory RAM and Flash),
- Standard interfaces (console interface, Fast Ethernet, ADSL, ISDN and LEDs),
- Optional connector for WLAN interface.

4 Interface Description

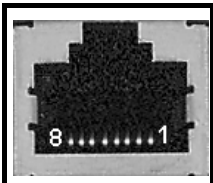
4.1 Console port (CONSOLE)

4.1.1 Characteristics

- RS 232,
- 9600 bps,
- 8 bits, 1 bit for stop, no parity.

4.1.2 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	TX	5	NC
2	RX	6	Cable type
3	GND	7	CTS
4	NC	8	RTS

- TX: Transmission
- RX: Reception
- NC: Not connected
- GND: Ground
- CTS: Clear-To-Send
- RTS: Ready-To-Send

A console cable for router configuration and maintenance only requires TX, RX and GND to be connected.

If the pin 6 is connected to the ground (pin 3), the cable is then identified as a cable connected to an asynchronous terminal. In that case, CTS and RTS can be used.

4.1.3 Cables

The console cable is defined in Appendix A.

4.2 ADSL - ADSL 2/2 + - RE-ADSL Interface (ADSL)

4.2.1 Characteristics

- ADSL: G.DMT Annex A (ADSL over POTS), G.DMT Annex B (ADSL over RNIS, U-R2 complaint),
- ADSL2, (G.992.3) / ADSL 2+ (G.992.5) / RE-ADSL (Reach Extended ADSL, G.992.3 Annex L),
- ITU G.992.2 (G.lite),
- Dying gasp (on ADSL Annex B).

4.2.2 Connector Pinout

RJ11 Connector:

Pin	Signal
1	NC
2	TIP
3	RING
4	NC

4.2.3 Cables

The cable of connection to the ADSL must be made using a standard cable.

4.3 Ethernet Switch Interface (SWITCH)

4.3.1 Characteristics

The switch Ethernet function offers 4 ports Ethernet. Every port can be switched and/or routed.

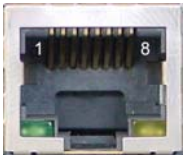
- 10/100 Mbits/s,
- Half or full duplex,
- Auto-negotiation,
- Auto MDI/MDIX.

4.3.2 Meaning of LED Colors

Green LED Lit	Link active
Blinking yellow LED	Traffic in progress

4.3.3 Connector Pinout

RJ45 Connector:



Pin	Signal	Pin	Signal
1	TD (+)	5	NC
2	TD (-)	6	RD (-)
3	RD (+)	7	NC
4	NC	8	NC

4.3.4 Cables

The cables are shielded, crossover/straight cables with 4 twisted pairs. The switch supports auto detection of crossover/straight cable ('auto-MDI/MDI-X detection'); the transmission pairs are (1-2) and receive pairs are (3-6).

4.4 S0 Backup interface (ISDN)

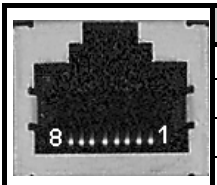
4.4.1 Characteristics

This interface provides an ISDN access for data services.

- TE mode only,
- Full duplex 2B + D channels compliant with ITU I.430.

4.4.2 Connector Pinout

Connector RJ45:



Pin	Signal	Pin	Signal
1	NC	5	RX (-)
2	NC	6	TX (-)
3	TX (+)	7	NC
4	RX (+)	8	NC

4.4.3 Cables

The ISDN cord is an unshielded cable including 2 twisted pairs: emission (3-6) and reception pairs (4-5).

5 Technical Characteristics

5.1 Climatic Environment

Operating Conditions:

Temperature	0° C ≤ T ≤ 45°C
Relative Humidity (HR)	5% ≤ HR ≤ 80%
Absolute Humidity	≤ 24g / m3
Altitude	≤ 2500 m

Storage Environment:

Temperature	- 25° C ≤ T ≤ 55°C
Relative Humidity (HR)	5% ≤ HR ≤ 80%
Absolute Humidity	≤ 24g / m3
Altitude	≤ 2500 m

5.2 Power Supply

External Power Supply 200-240 VAC / 20W (12V – 1.7A), actual consumption <10 W

5.3 Dimensions

The dimensions of the housing are:

Width	275 mm
Height	68 mm
Depth	152 mm

6 Installation

Always unplug the power cable before any hardware maintenance operation

6.1 Install the WLAN antenna

The WLAN antenna is installed in factory. Please raise it in a vertical position.

6.2 Wall mounted installation

The lower part of the router has 2 notches allowing one hangs mural. By installing two screws at the required distance, the router can be hung on any vertical surface.

Instructions of installation

1. Bore two horizontal holes separated by 244 mm of distance between centers if the router is hung with the rear panel at the upper position.
2. Mount both screws in the holes. Do not screw them completely but leave a distance of 5 mm between the wall and the head of the screw.
3. Hang the router and if necessary to adjust the screws in the notches of the router.

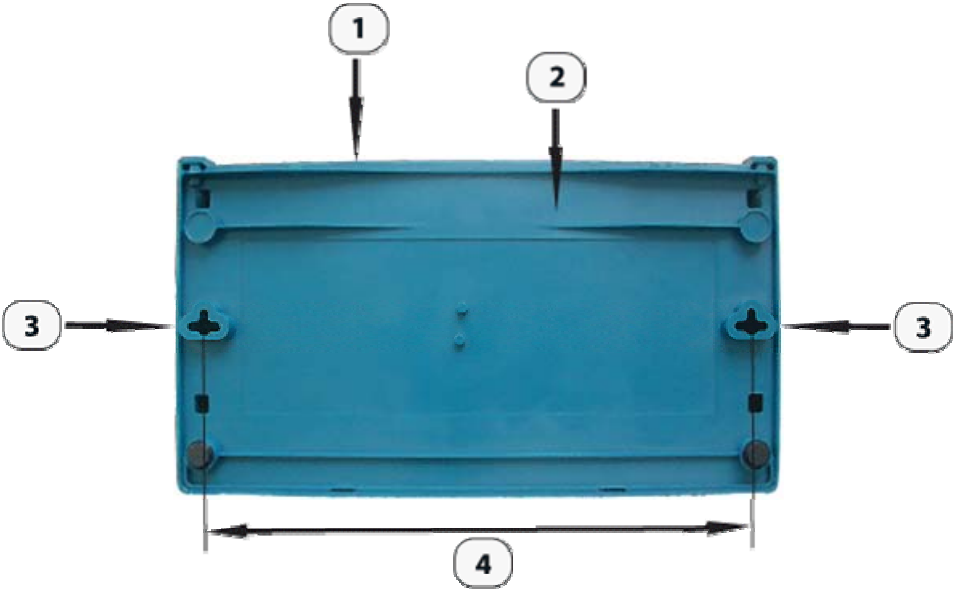


Figure 3. Positioning of the notches

1	Rear panel of the router	3	Notches
2	Bottom of the router	4	Distance between notch centers: 244 mm

6.3 Installing a SIM Card

This part is only relevant to a ONE20 that was delivered with the GPRS/EDGE daughter card.

The product must be powered off.

6.3.1 Opening the Chassis

1 Unlock the rear panel screw and removing it.

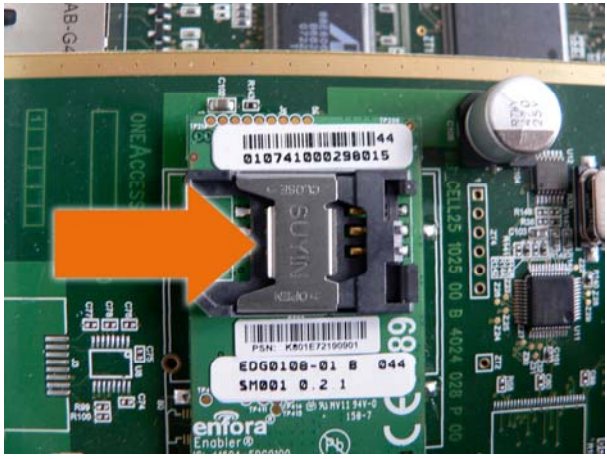
2 Unclip the lower part of the front panel.

3 Remove the cover.

6.3.2 Installing SIM Card

The casing must be open. The steps are the following:

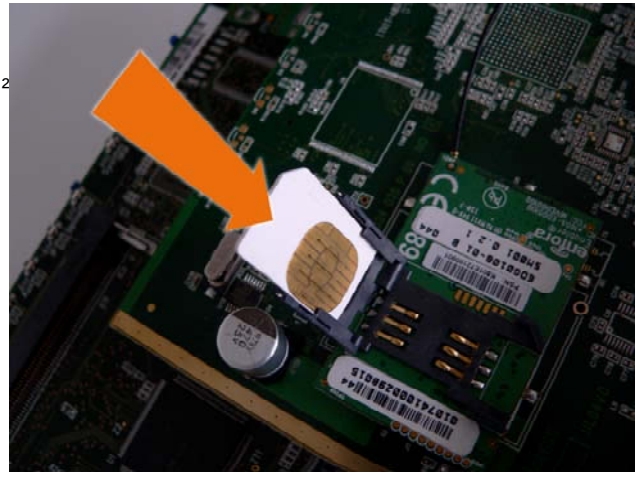
1 Unlock the SIM card holder by sliding the locking metal piece as indicated on the picture below



2 Raise the SIM card holder in vertical position

3 Insert the SIM card; make sure the SIM card is inserted in the right position as shown on the picture below.

2



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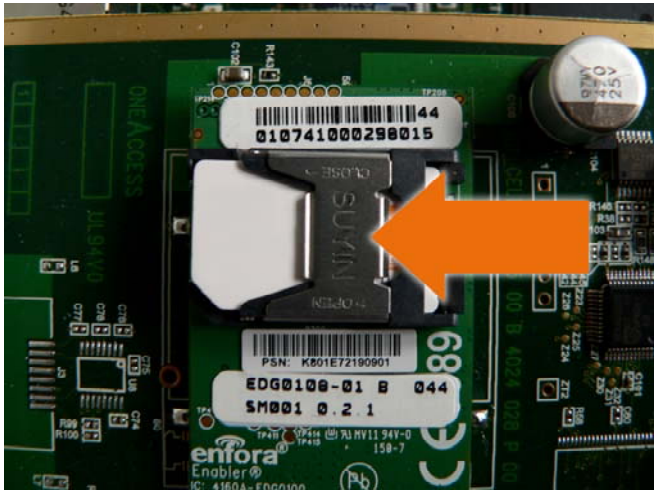
4 Put the SIM card holder in its former position and lock it.



6.4 Connections

The external power supply is connected on the rear panel of the device.

The external power supply is delivered with the router package.

Connect the 'jack' connector of the external power supply to the connector marked '**12V-1.7A**' router connector,
Secure the power supply connection by installing the DC power supply cord into the plastic ring.

The device shall not be used with another power supply than a power supply recommended by OneAccess.

7 Power up

In order to power up the router, always follow these steps:

Connect the DC power input jack from the power supply to the DC power input of the rear panel of the router,
Connect the power supply to the AC mains (100-240 V AC).

Few seconds after power-on, the device performs a series of self-tests and loads the software into memory (RAM), during which the 'STATUS' LED on the front panel blinks.

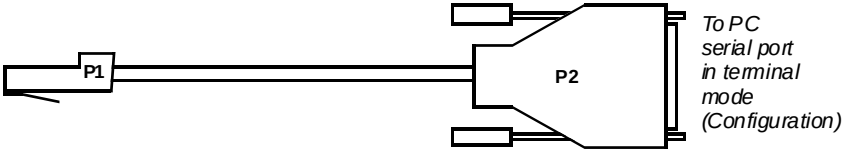
At the end of software loading (about 30 seconds):

The 'STATUS' LED light remains steady green if software initialization was successful,
The 'STATUS' LED remains blinking in case of software absence or error during software loading.

Refer to the Software and ONEOS User Guide for more information.

Appendix A - Console Cable

Catalog reference: **4 022 332 B 00 Ed A**



RJ45 - P1	SIGNAL	SUB-D 9 Pts Female - P2
1	TX	2
2	RX	3
3	GND	5